

REMARKS

This amendment is responsive to the Office Action dated May 19, 2005. Claims 1 - 9 are pending in this application. Claims 1 - 5 and 7 - 9 are rejected and claim 6 is objected to, but would be allowable if rewritten in independent form. Reexamination is respectfully requested in light of the foregoing amendments in the claims and following remarks.

These remarks follow the order of the outstanding Office Action beginning at page 2 thereof.

Allowable Subject Matter

Applicant notes the indicated allowability of claim 9.

Claim Objections

Applicant respectfully traverses the objection to claim 9 as being of improper dependent form for failure to further limit subject matter of a previous claim. Claim 9, unlike claim 1, claims a reflection type liquid crystal projector comprising the cross dichroic prism according to claim 1. On the other hand, claim 1 is a cross dichroic prism for any purpose.

Claim Rejections - 35 USC § 103

Claims 1 - 3 and 7 - 9 have been rejected as being unpatentable over Aritake '429 in view of Chu '935.

The Examiner cites Aritake, Figure 2 as an example of a light source of obliquely incident on a reflection type liquid crystal display device. This is generally shown in Figure 2, where the light from source (21) strikes a face of prism (28A) at a slight angle in order to allow projection back onto projection lens (27) shown offset from the light source (21). In this reference, the light enters the dichroic prism and exits the dichroic prism after having been reflected from liquid crystal display panels for each of the three colors. As shown in Figures 2 and 3, the light remains in a single plane.

In claim 1, as now amended, the light is incident on an entrance surface of the cross dichroic prism at an angle making the luminous flux oblique to the entrance surface when viewed from a side and perpendicular to the entrance surface when viewed from a top side of cross dichroic prism. This clearly defines over Aritake where the light when viewed from the side (such as from the side for red(26R)), the light will enter the prism perpendicular and exit perpendicular. On the other hand, as shown in Figure 2 of Aritake, when viewed from the top, light entering the prism is at an angle, and not perpendicular to the entrance surface, which is now a requirement of the claim.

Support for this amendment is found in Applicant's specification paragraph [0043], which explains the side view and top plan view of Figures 1A and 1B. Support is also found in paragraph [0040] as well as [0038]. Attached hereto are sketches

showing Applicant's Figure 1B with the two additional colors R and B drawn in for the Examiner's consideration. In Figure 1B, dichroic prism (16) is the upper prism shown in Figure 1A. The entry perpendicular from as viewed from the top is seen.

Next, attached is a second sketch showing dichroic prism (21) (the bottom prism of Figure 1A) showing light returning from the color display devices R and B as well as G. When these figures are considered together, it is seen that Applicant's device also differs substantially from Aritake, because Aritake combines the light in the same prism that separates it. On the other hand, in Applicant's configuration this occurs in two separate prisms, namely prism (16) and prism (21).

In Applicant's specification, it is explained in paragraph [0006] to [0008] that when an oblique incidence type configuration is used, that there is an additional problem where the quantity of each color of light varies depending on the order of incidence in the dichroic prisms (see paragraph [0008]). Applicant's invention is directed to solving this problem in oblique incidence angle (also known as off axis in general) type configurations.

There is no suggestion or reason within the cited references that would provide one of ordinary skill in the art with any reason to combine the references. Chu never has the problem of oblique incidence recombination, because Chu, like the prior art discussed by Applicant and as shown in Figure 15, does not have

the recombination problem. Although Chu satisfies an equation, there is no teaching that this would have any particular significance or use in cross dichroic prisms where the light source is obliquely incident on a reflection type liquid crystal display device where the luminous flux is oblique to the entrance surface when viewed from a side and perpendicular to the entrance surface when viewed from a top side as claimed.

The Examiner argues at the top of page 5 that the combination of Chu and Aritake would be obvious because it would allow for easier preparation of the prisms and making up the dichroic prism at lower cost. There is nothing in the references that would suggest such cost considerations and nothing that would suggest any ease of manufacturing. As pointed out in Applicant's specification, the reason for the combination is to avoid the problem of color light component variation depending upon the order of incidence on the dichroic films (111), (112) when the cross dichroic prism (103) is used in the prior art as shown in Figures 15A and 15B in an oblique incidence type. See Applicant's specification, paragraph [0008].

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance, and early action in accordance thereof is requested. In the event there is any reason why the application cannot be allowed in this current condition, it is respectfully requested that the Examiner contact

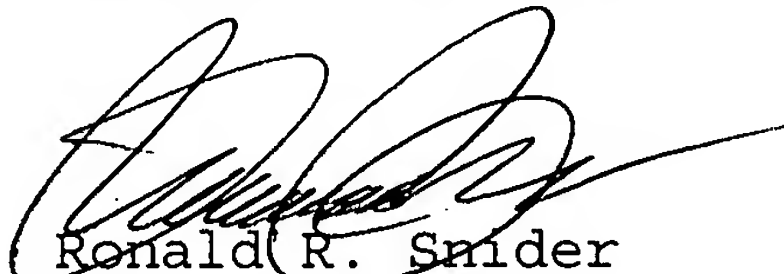
S/N: 10/665,549

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the undersigned at the number listed below to resolve any problems by Interview or Examiner's Amendment.

Respectfully submitted,



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